

What is claimed is:

1. A method of inspecting a target component part of an apparatus included in a steam turbine system, the target component part being exposed to steam that flows through a space defined by an enclosing member of the apparatus when the steam-turbine system is in normal operation, said method comprising the steps of:

shutting down the steam turbine system which has been in normal operation;

obtaining, after shutting down the turbine system, a first data by means of an inspecting device, the first data relating to a dimension of a crack formed in the target component part or relating to a clearance between the target component part and an adjacent component part arranged adjacent to the target component part, wherein the obtaining step is performed when a time period in a range of 24 to 100 hours passes from the shutting-down of the turbine system, or before an atmospheric temperature of the space is lowered to 100°C, and wherein the obtaining step is performed without disassembling the enclosing member and the target component part from the apparatus having the target component part; and

judging whether the target component part should be repaired upon comparing the first data with a judgmental standard, or comparing an output calculated by applying the first data to a predetermined function with a judgmental standard.

2. The method according to claim 1, wherein the step of obtaining the first data is performed when the atmospheric temperature of the space is not higher than 300°C.

3. The method according to claim 1 further comprising a step of obtaining, after the step of obtaining the

first data is performed, a second data by means of the inspecting device, the first data relating to a dimension of a crack formed in the target component part or relating to a clearance between the target component part and an adjacent component part arranged adjacent to the target component part,

wherein the step of obtaining the second data is performed without disassembling the enclosing member and the target component part from the apparatus having the target component part, and

wherein the judging step is performed by comparing at least one of the first data and the second data with a judgmental standard, or comparing an output calculated by applying at least one of the first data and the second data to a predetermined function with a judgmental standard.

4. The method according to claim 1, wherein the first data relating to the clearance is the clearance itself, a dimension of an eroded portion in the target component part or said adjacent component part, or a dimension of a scale layer formed on the target component part or said adjacent component part.

5. The method according to claim 1, wherein the step of obtaining the first data is performed with the inspecting device being inserted into the space through an insertion path extending through the enclosing member.

6. The method according to claim 5, wherein:

the apparatus included in a steam turbine system is a turbine, and the enclosing element is a turbine casing; and

the insertion path comprises a steam pipe for supplying or discharging the steam into or from the turbine when the turbine system is in the normal

operation, or an opening formed in the turbine casing exclusively for insertion of the inspecting device.

7. The method according to claim 1, wherein the inspecting device comprises an image pick-up device adapted to pick up an image of the target component part.

8. The method according to claim 1, wherein the target component part is the enclosing member having an inner surface facing the space and an outer surface, and wherein the step of obtaining the first data is performed with the inspecting device being attached to the outer surface of the enclosing member.

9. The method according to claim 8, wherein the inspecting device comprises a probe of an ultrasonic flaw detection apparatus.

10. The method according to claim 8, wherein the apparatus included in the steam turbine system is a valve for stopping or controlling a flow of the steam, and wherein the enclosing member is a valve casing.